IS 5485 (1980): Cotton Yarn Waste [TXD 31: Man-Made Fibres, Cotton and their Products]

BLANK PAGE

IS : 5485 - 1980
(Reaffirmed 2001)

Indian Standard

SPECIFICATION FOR COTTON YARN WASTE

(First Revision)

First Reprint JUNE 1989

UDC 677.21.081

BUREAU OF INDIAN STANDARDS
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

Gr 3 *May* 1981

Indian Standard

SPECIFICATION FOR COTTON YARN WASTE

(First Revision)

Cotton and Cotton Products Sectional Committee, TDC 2

Chairman	*Representing*
SHRI A. SUBRAMANIAM	Madura Coats Limited, Madurai
Members	
SHRI A. CHELLARAJ (*Alternate* to Shri A. Subramaniam)	
SHRI T. V. ANANTHAN	The Bombay Textile Research Association, Bombay
DR N. BALASUBRAMANIAM (*Alternate*)	
CAPT J. M. L. BANSAL	Naval Headquarters, New Delhi
SHRI T. R. IYENGAR (*Alternate*)	
SHRI M. K. BARDHAN	Ministry of Defence (DGI)
SHRI R. K. MEHRA (*Alternate*)	
SHRI A. T. BASAK	Inspection Wing, Directorate General of Supplies & Disposals. New Delhi
SHRI G. N. CHATTERJI	Ministry of Defence (R & D)
SHRI R. GHOSH (*Alternate*)	
SHRI A. K. DALMIA	Jaya Shree Textiles & Industries Ltd, Rishra
SHRI K. THYAGARAJAN (*Alternate*)	
DIRECTOR OF HANDLOOMS & TEXTILES	Government of Tamil Nadu
SHRI A. GHOSH	National Test House, Calcutta
SHRI K. K. GOEL	Textiles Committee, Bombay
SHRI R. V. NANDREKAR (*Alternate*)	
SHRI R. N. JOSHI	The Millowners' Association, Bombay
SHRI R. M. MERCHANT	The Cotton Textiles Export Promotion, Council, Bombay
SHRI GAUTAMBHAI S. NANAVATI	The Ahmedabad Textile Mills Association, Ahmadabad
DR P. R. ROY (*Alternate*)	
SHRI J. K. S. NICHOLSON	The East India Cotton Association Ltd, Bombay
SHRI D. G. DAMLE (*Alternate*)	

(*Continued on page* 2)

(*Continued from page* 1)

Members	*Representing*
SHRI C. K. PATEL	Calico Mills, Ahmadabad
SHRI T. RANGASWAMY	The Southern India Mills' Association, Coimbatore
SHRI A. I. S. RAO	Office of the Textile Commissioner, Bombay
SHRI S. P. GHOSAL (*Alternate*)	
SHRI T. V. RATNAM	South India Textile Research Association, Coimbatore
SHRI UTTAM SINGH SACHDEVA	The Delhi Cloth & General Mills Co Ltd, Delhi
SHRI N. S. SHARMA	The All India Federation of Co-operative Spinning Mills Ltd, Bombay
SHRI V. N. SUBBA RAO	Binny Limited, Madras
DR P. V. SESHADRI	National Textile Corporation Ltd, New Delhi
SHRI O. P. BANSAL (*Alternate*)	
DR V. SUNDARAM	Indian Council of Agricultural Research, New Delhi
DR V. G. MUNSHI (*Alternate*)	
SHRI HARKISHON N. UDANI	Keshavlal Talakchand (Pvt) Ltd, Bombay
SHRI S. M. CHAKRABORTY, Director (Tex)	Director General, ISI (*Ex-officio Member*)

Secretaries

SHRI G.S. ABHYANKAR
Deputy Director (Tex), ISI

SHRI O.P. KHULLAR
Deputy Director (Tex), ISI

Cotton and Cotton Products Subcommittee, TDC 2 : 1

Convener	
SHRI C. K. PATEL	Calico Mills, Ahmadabad
Members	
SHRI A. P. ANANTHAKRISHNAN	The Millowners' Association, Bombay
SHRI A. T. BASAK	Inspection Wing, Directorate General of Supplies & Disposals, New Delhi
SHRI D. K. NANDY (*Alternate*)	
SHRI R. DHARMARAJAN	Modi Spinning & Weaving Mills Co Ltd, Modinagar
SHRI R. N. JOSHI	The Millowners' Association, Bombay
PROF R. C. D. KAUSHIK	The Technological Institute of Textiles, Bhiwani
SHRI K. KRISHNAMURTHY	The Textile Corporation of Marathwada Ltd, Aurangabad
SHRI S. VENKATARAMAN (*Alternate*)	
SHRI GAUTAMBHAI S. NANAVATI	The Ahmedabad Textile Mills' Association, Ahmadabad
SHRI K. R. SITWALA (*Alternate*)	
SHRI MADHUKANT PRANLAL	The Ahmedabad Textile Mills' Association, Ahmadabad
DR P. R. ROY (*Alternate*)	

(*Continued on page* 11)

Indian Standard

SPECIFICATION FOR COTTON YARN WASTE

(First Revision)

0. FOREWORD

0.1 This Indian Standard (First Revision) was adopted by the Indian Standards Institution on 15 December 1980, after the draft finalized by the Cotton and Cotton Products Sectional Committee, had been approved by the Textile Division Council.

0.2 This standard, which was orginally published in 1969, has been taken up for revision in the light of the experience gained during the use over the period.

0.3 Cotton yarn waste, a bye-product of cotton spinning industry, is used for cleaning machines and instruments. After hand picking the hard and twisted threads, loops, metallic wires, lags, etc the waste yarn is teased adequately to open out the lumps and to remove embedded impurities like dirt, grit, etc.

0.4 To familiarize the industry with International system of units (SI Units), the recommended SI Units for use in the textile industry are given in Appendix B.

0.4.1 Standards of weights and Measures Act, 1976, also stipulates use of SI Units.

0.5 For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded of in accordance with IS: 2-1960*. The significant places retained in the rounded off value should be the same as that of the specified value in this standard.

1. SCOPE

1.1 This standard prescribes the requirements of two types of teased cotton yarn waste.

*Rules for rounding off numerical values (*revised*).

1.2 This standard does not specify the general appearance, feel, shade, finish, etc of cotton yarn waste (*see also* **4.2**).

2. TYPES

2.1 Cotton yarn waste shall be of two types:

Type 1—White, consisting of well teased, undyed and unsized clean cotton yarn waste of normal twist

Type 2—Coloured, consisting of well-teased, dyed and undyed cotton yarn waste. The proportion of dyed yarn should not be less than 50 percent

3. GENERAL REQUIREMENTS

3.1 The cotton yarn waste should be well teased and blended. It should be reasonably free from non-textile substances like dirt, grit, wooden chips, bidi ends, papers, feathers, etc and also free from textile impurities such as soft waste (loose untwisted strands), hard twisted, folded or sized yarn, rags, etc.

3.2 The cotton yarn waste shall be free from loading matter such as lime, barytes, china clay, etc. It shall not look oily or dirty and have a clear appearance and free from lumps.

3.3 The cotton yarn waste shall consist substantially of absorbent cotton yarns. Staple fibre yarn (viscose rayon) up to 20 percent may be permitted, if not stated otherwise. Traces of man-made fibres yarn other than staple yarn are also permissible.

4. SPECIFIC REQUIREMENTS

4.1 The cotton yarn waste shall comply with the requirements of Table 1.

4.2 Sealed Sample — The supply shall be in conformity with the sample, agreed between buyer and seller and sealed accordingly, in respect of indeterminable characteristics like general appearance, shade etc.

5. PACKING

5.1 Cotton yarn waste shall be packed in bales having net mass of 25 or 50 kg as agreed. The cotton yarn waste shall be lightly pressed to form a rectangular and wrapped with an inner layer of polyethylene film (*see* IS : 2508-1977*) of 40 microns thickness, minimum or alternatively kraft paper (*see* IS : 1397-1967†) waterproof paper (*see* IS : 1398-1968‡) and an outer layer of heavy cee cloth (*see* IS: 3751-1966§) or equivalent

*Specification for low density polyethylene films (*first revision*).
†Specification for kraft paper (*first revision*).
‡Specification for packing paper, waterproof, bitumen-laminated (*first revision*).
§Specification for heavy cee cloth.

hessian. The overlapping of the packing materials shall be at least 10 cm so as to ensure full protection to the contents of the bale. The overlapping of the outer layer of hessian shall be such that it could be properly and securely sewn round the bale. The bale shall be stitched with double 3-ply jute twine with not less than 6 stitches per dm taking care not to pierce the inner layer of the bale during stitching. Sufficient hessian shall be pulled out at each corner to form ears of about 15 cm in length. The bale shall be stripped with at least 2 bailing hoops to ensure safety and prevent pilferage of the contents during transit/storage. The bales shall not be press-packed.

TABLE 1 REQUIREMENTS OF COTTON YARN WASTE

(*Clause* 4.1)

Sl No.	Characteristic	Requirement		Method of Test Ref To
		Type 1	Type 2	
1.	Moisture content, percent, *Max*	9	9	5 of IS : 199-1973*
2.	Oil content, percent, *Max*	2	4	7 of IS : 199-1973*
3.	Size starch, etc, percent, *Max*	3	6	8 of IS : 199-1973*
4.	Dirt, grit, etc, percent, *Max*	1	2	A-1
5.	Textile impurities (rags, twines), percent, *Max*	Nil	2	A-2
6.	Non-textile impurities (wooden chips, bidi ends, paper, feather, leather, etc) percent, *Max*	Nil	0·5	A-2
7.	Metallic impurities (wires, etc)	Nil	Nil	—
8.	Soft waste, percent, *Max*	2	4	A-3
9.	Coloured yarn, percent, *Min*	Nil	50	A-4
10.	Man-made fibres, percent, *Max*	20	20	IS : 1889 (Part I)-1976†

*Methods for estimation of moisture, total size or finish, ash and fatty matter in grey and finished cotton textile materials (*second revision*).

†Method for quantitative chemical analysis of binary mixtures of regenerated cellulosic fibres and cotton: Part I Sodium zincate method.

6. MARKING

6.1 The bale shall be marked with the following information in a legible manner using indelible ink:

a) Name of the material;

b) Type of waste;

c) Net and gross mass; and

d) Name, initials or trade-mark, if any, of the supplier.

6.1.1 *ISI Certification Mark* — The bales may also be marked with the ISI Certification Mark.

NOTE — The use of the ISI Certification Mark is governed by the provisions of the Indian Standards Institution (Certification Marks) Act and the rules and Regulations made thereunder. The ISI Mark on products covered by an Indian Standard conveys the assurance that they have been produced to comply with the requirements of that standard under a well-defined system of inspection, testing and quality control which is devised and supervised by ISI and operated by the producer. ISI marked products are also continuously checked by ISI for conformity to that standard as a further safeguard. Details of conditions under which a licence for the use of the ISI Certification Mark may be granted to manufacturers or processors, may be obtained from the Indian Standards Institution.

7. SAMPLING

7.1 Lot — The quantity of cotton yarn waste of the same type delivered to a buyer against a despatch note shall constitute a lot.

7.2 Unless otherwise agreed to between the buyer and the seller, the number of bales to be selected at random from a lot shall be according to Table 2.

To ensure the randomness of selection, methods given in IS : 4905-1968* shall be followed.

7.3 From each of the bale selected according to **7.2**, the sample shall be drawn from at least five laps in the bale.

7.4 The number of tests to be carried out shall be equal to the number of bales selected if the number is less than or equal to 7. When the number of bales selected are more than 7, samples from two or three bales for lot size of up to 300 and above 300 respectively, shall be mixed together thoroughly to form a composite sample. The number of samples tested in this case shall be 7.

7.5 Criteria for Conformity—The lot shall be considered in conformity to the requirements of this standard, if all the samples tested satisfy the various requirements.

*Methods for random sampling.

TABLE 2 SAMPLE SIZE

(*Clause* 7.2)

No. of Bales in the Lot	No. of Bales to be Selected
(1)	(2)
Up to 50	2
51 ,, 100	4
101 ,, 150	7
151 ,, 300	14
301 and above	21

APPENDIX A

(*Table* 1)

METHODS OF TEST

A-1. DIRT, GRIT, ETC

A-1.1 Take cotton yarn waste about 100 g from portions of composite sample and determine its mass accurately. Spread the sample uniformly in a 1·70 mm IS Sieve [*see* IS : 460(Part I)-1978*]. Open the sieve on the ground or table suitably covered with a white paper. Open out the sample thoroughly inside the sieve, care being taken to see that while opening no fibre falls out of the sieve. Lift the sieve and shake it horizontally 50 times, taking care that dirt, grit, etc, from the sieve falls on the white paper only. After 50 shakes, collect the dirt, grit, etc, from the paper and determine its mass accurately. Express the dirt, grit, etc, as percentage of the mass of the sample.

A-2. TEXTILE/NON-TEXTILE IMPURITIES

A-2.1 Take cotton waste about 2 kg from portions of composite sample and determine its mass accurately. Spread the sample on a clean table and segregate the textile/non-textile impurities manually. Determine their mass separately and express them as percentage of the mass of the sample.

A-3. SOFT WASTE

A-3.1 After opening out and shaking the sample for removing dirt, grit, etc (*see* **A-1**), determine the mass of clean sample. Segregate the soft waste, flutty material manually. Determine its mass accurately and express it as a percentage of the mass of the clean sample.

*Specification for test sieves: Part I Wire cloth test sieves.

A-4. COLOURED YARN

A-4.1 After opening out and shaking the sample for removing dirt, grit, etc (*see* **A-1**), determine the mass of clean sample. Segregate the coloured yarn waste manually and determine its mass accurately. Express it as percentage of mass of the clean sample.

APPENDIX B

(*Clause* 0.4)

RECOMMENDED SI UNITS FOR TEXTILES

Sl No.	Characteristic	SI Unit		Application
		Unit(s)	Abbreviation(s)	
(1)	(2)	(3)	(4)	(5)
1.	Length	Millimetre	mm	Fibres
		Millimetre, centimetre	mm, cm	Samples, test specimens (as appropriate)
		Metre	m	Yarns, ropes, cordage, fabrics
2.	Width	Millimetre	mm	Narrow fabrics
		Centimetre	cm	Other fabrics
		Millimetre, centimetre	mm, cm	Samples, test specimens (as appropriate)
		Centimetre, metre	cm, m	Carpets, druggets, *DURRIES* (as appropriate)
3.	Thickness	Micrometre (micron)	µm	Delicate fabrics
		Millimetre	mm	Other fabrics, carpets, felts
4.	Linear density	Tex	tex	Yarns
		Millitex	mtex	Fibres
		Decitex	dtex	Filaments, filament yarns
		Kilotex	ktex	Slivers, ropes
5.	Diameter	Micrometre (micron)	µm	Fibres
		Millimetre	mm	Yarns, ropes, cordage

(*Continued*)

RECOMMENDED SI UNITS FOR TEXTILES — *Contd*

Sl No.	Characteristic	SI Unit		Application
		Unit(s)	Abbreviation(s)	
(1)	(2)	(3)	(4)	(5)
6.	Circumference	Millimetre	mm	Ropes, cordages
7.	Threads in fabric			Woven fabrics (as appropriate)
	a) Lengthwise	Number per centimetre Number per decimetre	ends/cm ends/dm	
	b) Widthwise	Number per centimetre Number per decimetre	picks/cm picks/dm	
8.	Warp threads in loom	Number per centimetre	ends/cm	Reeds
9.	Stitches in knitted fabric			Knitted fabrics (as appropriate)
	a) Lengthwise	Courses per centimetre Courses per decimetre	courses/cm courses/dm	
	b) Widthwise	Wales per centimetre Wales per decimetre	wales/cm wales/dm	
10.	Stitch length	Millimetre	mm	Knitted fabrics, made-up items
11.	Mass per unit area	Grams per square metre	g/m^2	Fabrics
12.	Mass per unit length	Grams per metre	g/m	Fabrics
13.	Twist	Turns per centimetre Turns per metre	turns/cm turns/m	Yarns, ropes (as appropriate)
14.	Test or gauge length	Millimetre, centimetre	mm, cm	Fibres, yarns and fabric specimens (as appropriate)
15.	Breaking load	Millinewton	mN	Fibres, delicate yarns (individual or skeins)
		Newton	N	Strong yarns (individual or skeins), ropes cordage, fabrics

(*Continued*)

RECOMMENDED SI UNITS FOR TEXTILES — *Contd*

Sl No.	Characteristic	SI Unit		Application
		Unit(s)	Abbreviation(s)	
(1)	(2)	(3)	(4)	(5)
16.	Breaking length	Kilometre	km	Yarns
17.	Tenacity	Millinewton per tex	mN/tex	Fibres, yarns (individual or skeins)
18.	Twist factor or twist multiplier	Turns per centimetre × square root of tex	turns/cm × $\sqrt{\text{tex}}$	Yarns (as appropriate)
		Turns per metre × square root of tex	turns/m × $\sqrt{\text{tex}}$	
19.	Bursting strength	Newton per square centimetre	N/cm^2	Fabrics
20.	Tear strength	Millinewton	mN	Fabrics (as appropriate)
		Newton	N	
21.	Pile height	Millimetre	mm	Carpets
22.	Pile density	Mass of pile yarn in grams per square metre per millimetre pile height	g/m^2/mm pile height	Pile carpets
23.	Elastic modulus	Millinewton per tex per unit deformation	mN/tex/unit deformation	Fibres, yarns strands

(*Continued from page* 2)

Members	*Representing*
SHRI T. RANGASWAMY	The Southern India Mills' Association, Coimbatore
SHRI A. I. S. RAO	Office of the Textile Commissioner, Bombay
SHRI S. P. GHOSAL (*Alternate*)	
SHRI UTTAM SINGH SACHDEVA	The Delhi Cloth & General Mills Co Ltd, Delhi
SHRI D. R. SHARMA	The Century Spinning & Mfg Co Ltd, Bombay
SHRI K. G. SETHURAM (*Alternate*)	
SHRI C. G. SHROFF	Standard Mills Co Ltd, Bombay
SHRI M. T. SINGHI	Maharashtra Cooperative Spinning Mills Federation, Bombay
SHRI D. R. YADAV	Ministry of Defence (DGI)
KUMARI L. C. PATEL (*Alternate*)	

BUREAU OF INDIAN STANDARDS

Headquarters:

Manak Bhavan, 9 Bahadur Shah Zafar Marg, NEW DELHI 110002

Telephones: 331 01 31, 331 13 75 Telegrams: Manaksanstha (Common to all Offices)

Regional Offices:	*Telephone*
Central : Manak Bhavan, 9 Bahadur Shah Zafar Marg, NEW DELHI 110002	331 01 31 331 13 75
*Eastern : 1/14 C. I. T. Scheme VII M, V. I. P. Road, Maniktola, CALCUTTA 700054	36 24 99
Northern : SCO 445-446, Sector 35-C, CHANDIGARH 160036	2 18 43 3 16 41
Southern : C. I. T. Campus, MADRAS 600113	41 24 42 41 25 19 41 29 16
†Western : Manakalaya, E9 MIDC, Marol, Andheri (East), BOMBAY 400093	6 32 92 95

Branch Offices:	
'Pushpak', Nurmohamed Shaikh Marg, Khanpur, AHMADABAD 380001	2 63 48 2 63 49
‡Peenya Industrial Area 1st Stage, Bangalore Tumkur Road BANGALORE 560058	38 49 55 38 49 56
Gangotri Complex, 5th Floor, Bhadbhada Road, T. T. Nagar, BHOPAL 462003	6 67 16
Plot No. 82/83, Lewis Road, BHUBANESHWAR 751002	5 36 27
53/5, Ward No. 29, R.G. Barua Road, 5th Byelane, GUWAHATI 781003	3 31 77
5-8-56C L. N. Gupta Marg (Nampally Station Road) HYDERABAD 500001	23 10 83
R14 Yudhister Marg, C Scheme, JAIPUR 302005	6 34 71 6 98 32
117/418 B Sarvodaya Nagar, KANPUR 208005	21 68 76 21 82 92
Patliputra Industrial Estate, PATNA 800013	6 23 05
T.C. No. 14/1421, University P.O., Palayam TRIVANDRUM 695035	6 21 04 6 21 17

Inspection Offices (With Sale Point):

Pushpanjali, First Floor, 205-A West High Court Road, Shankar Nagar Square, NAGPUR 440010	2 51 71
Institution of Engineers (India) Building, 1332 Shivaji Nagar, PUNE 411005	5 24 35

*Sales Office in Calcutta is at 5 Chowringhee Approach, P. O. Princep Street, Calcutta 700072 — 27 68 00

†Sales Office in Bombay is at Novelty Chambers, Grant Road, Bombay 400007 — 89 65 28

‡Sales Office in Bangalore is at Unity Building, Narasimharaja Square, Bangalore 560002 — 22 36 71

Reprography Unit, BIS, New Delhi, India